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(58) Field of Search
UK CL (Edition S) **A4B**
INT CL[7] **A47B 45/00 47/00 87/00 87/02**
Online : EPODOC,WPI,JAPIO

(54) Abstract Title
Modular storage unit

(57) A storage unit has an external wall section 2 with walls 3,4 each having a flange 5,6. The walls and flanges each have a tapered slot 14,15,16,17. Two adjacent units are connected by a retaining clip having a tapered region adapted to engage a pair of aligned slots (Figs 3, 5). Each unit may have an internal wall section 7 connected to the external walls by flanges 5,6,8,9 and which includes a rear wall 12 with a hole 13 for wall mounting.

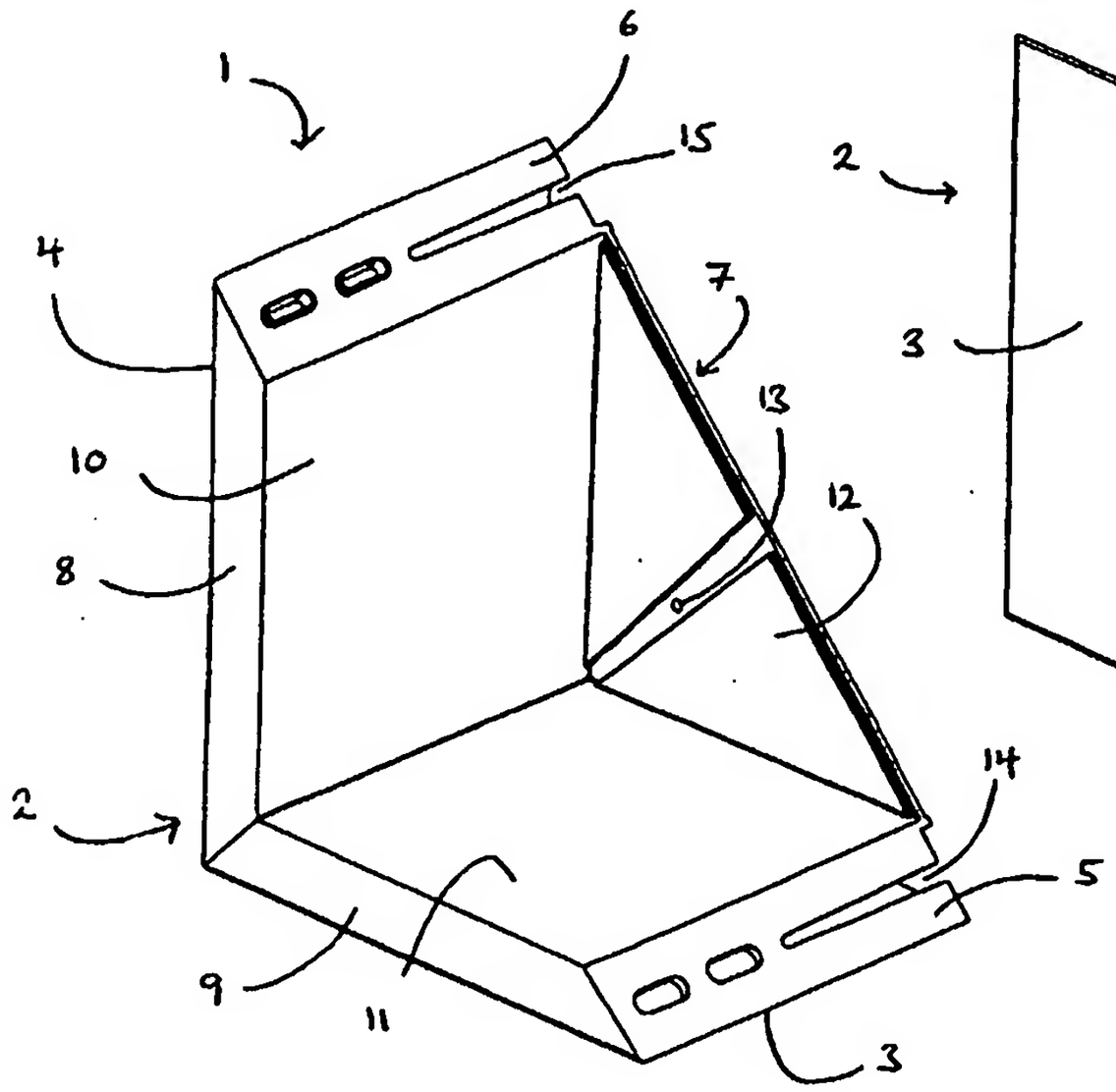

Fig 2

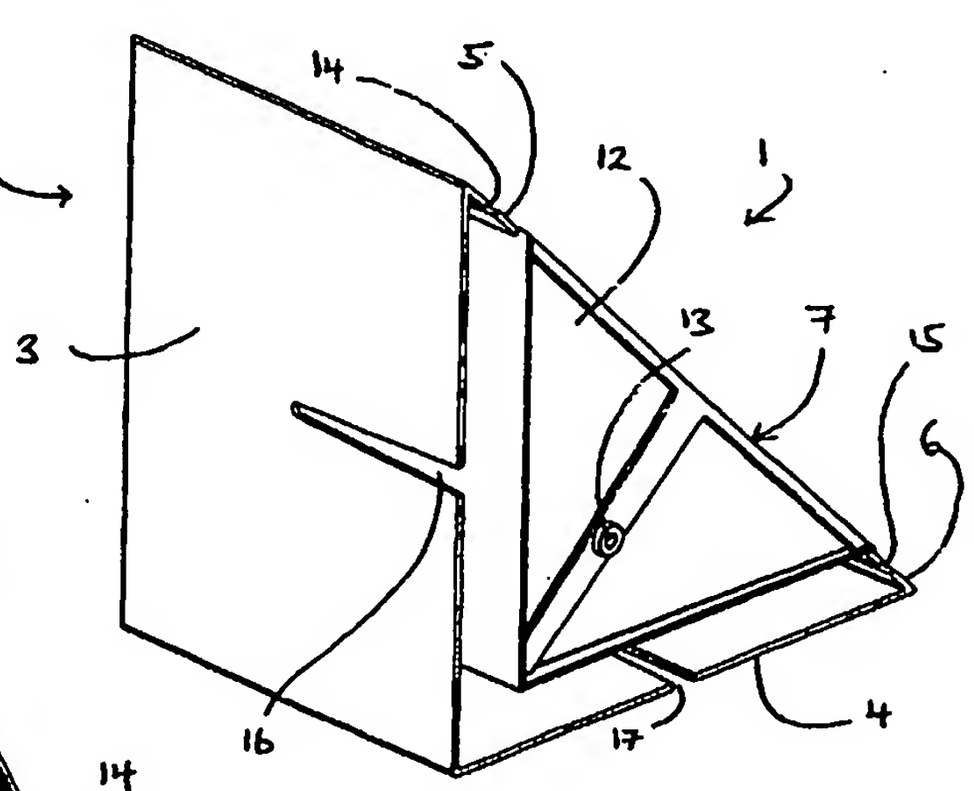

Fig 1

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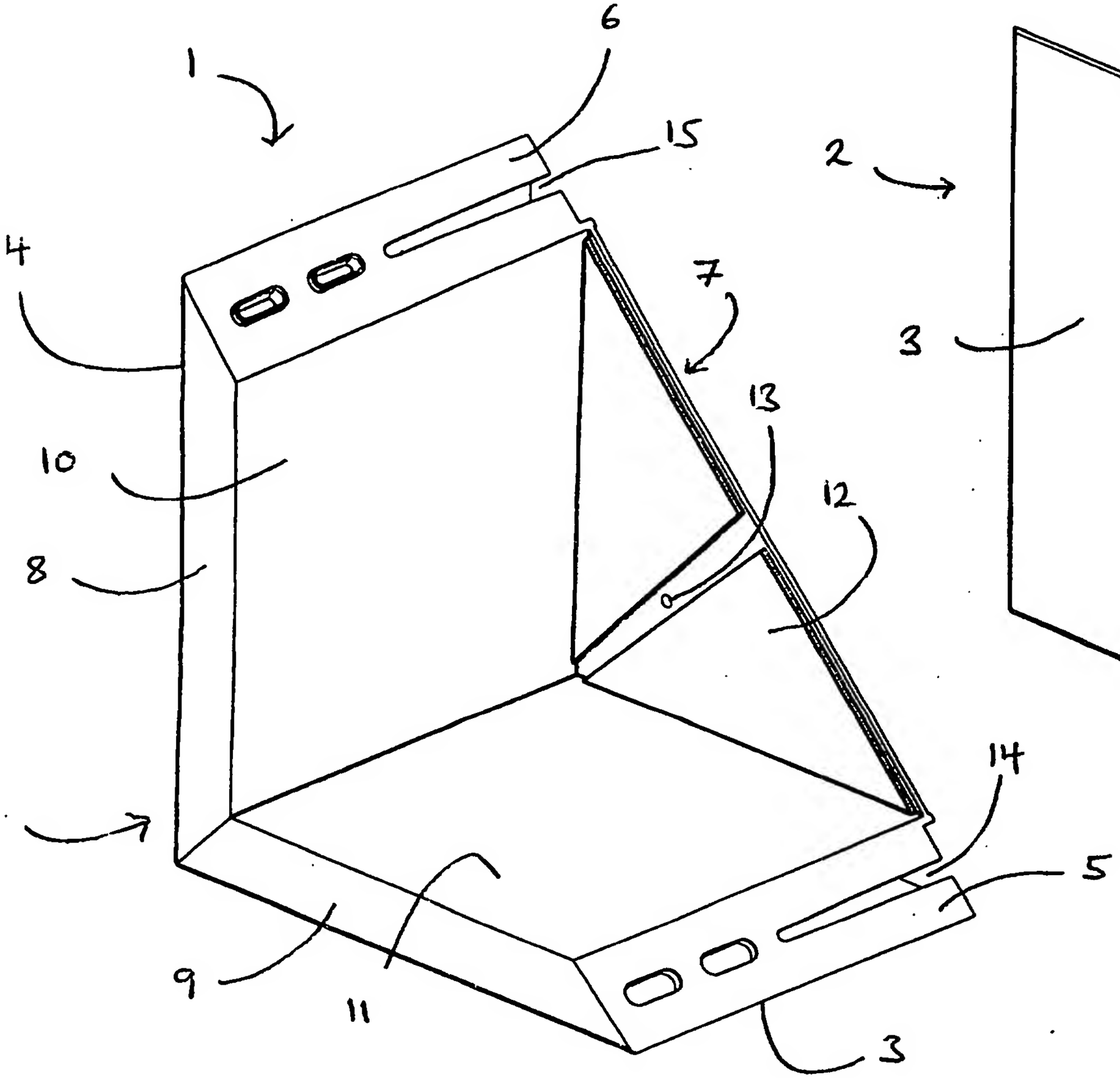

FIG 2

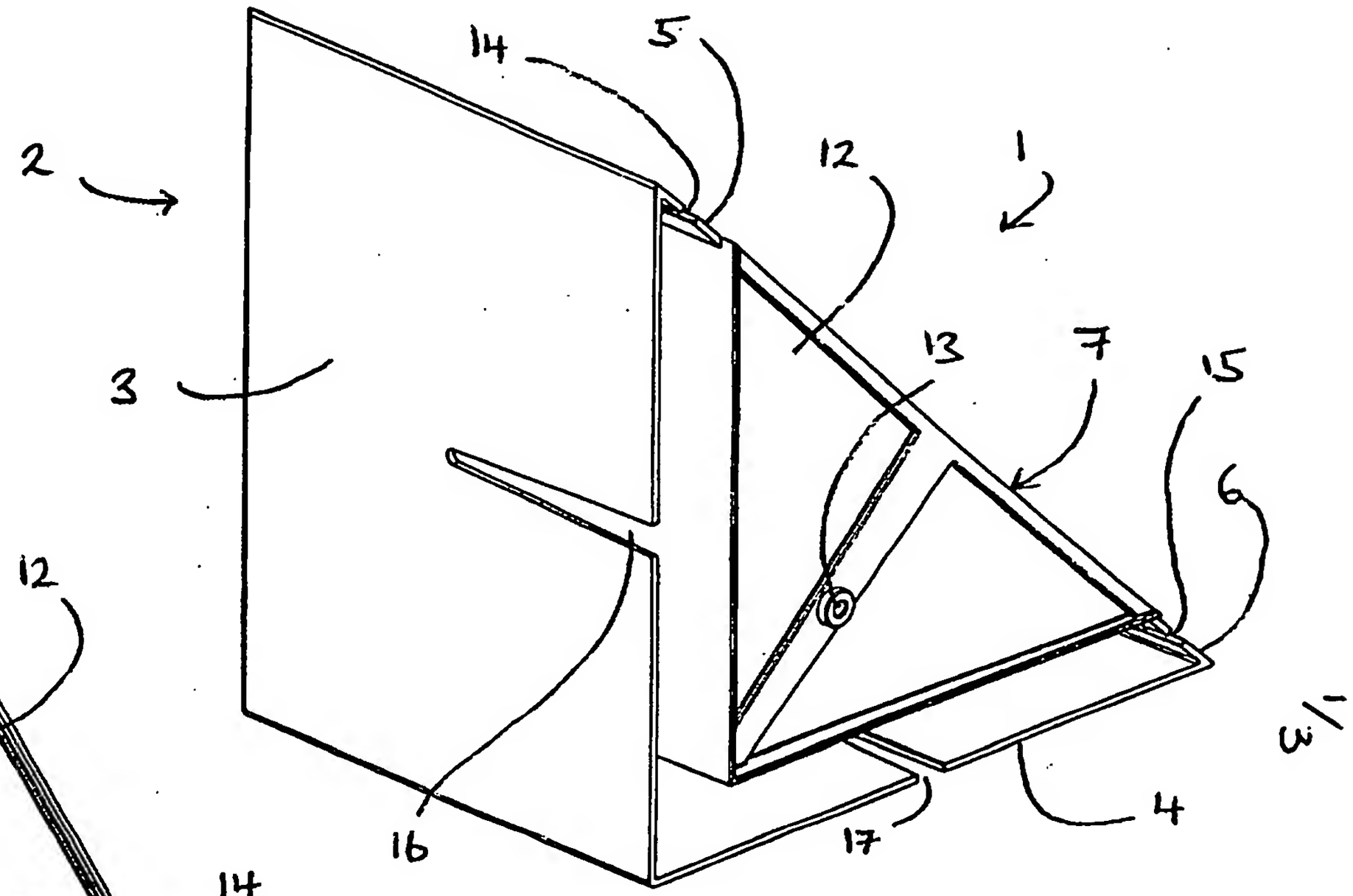

FIG 1

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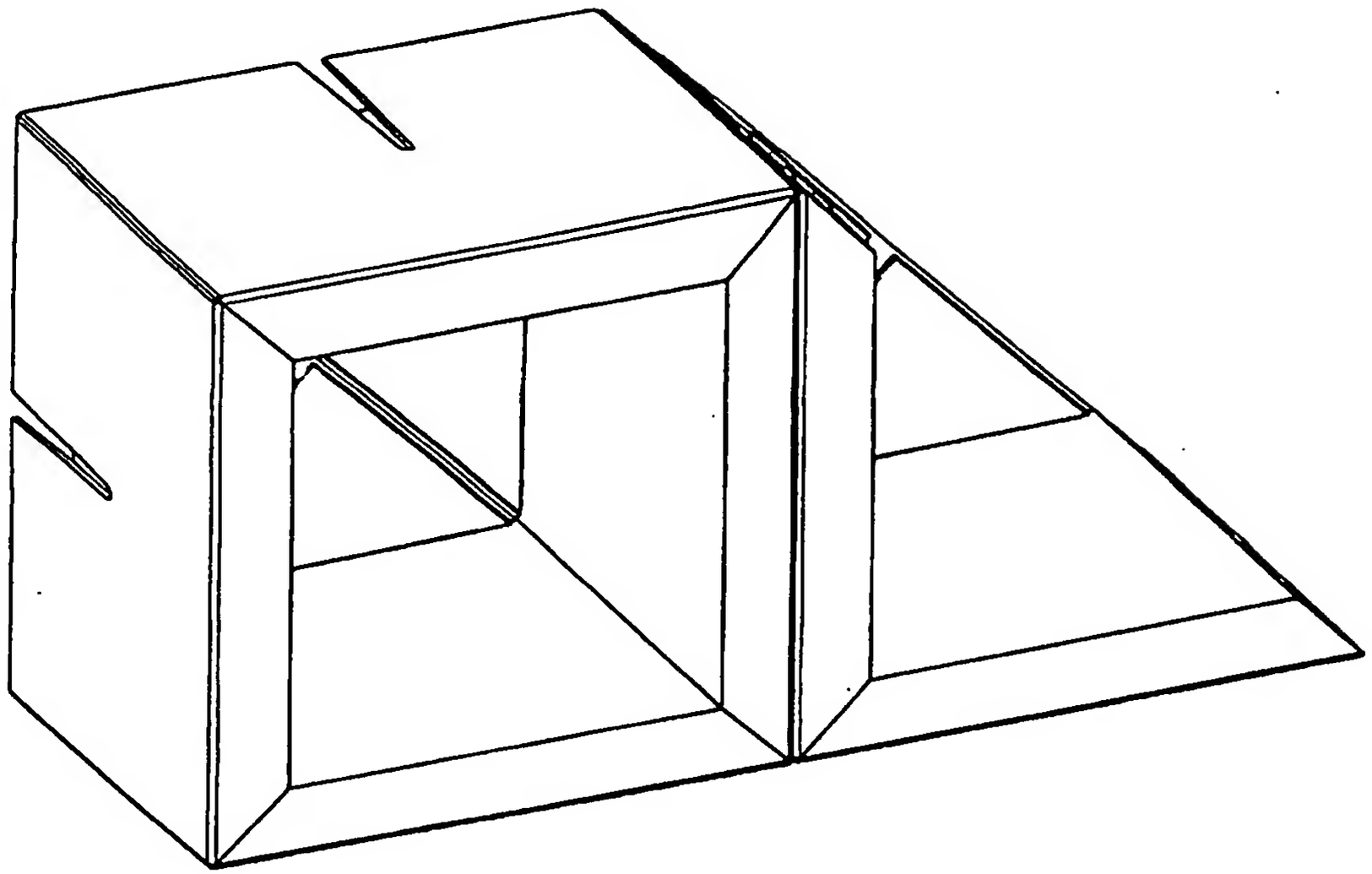


FIG 4

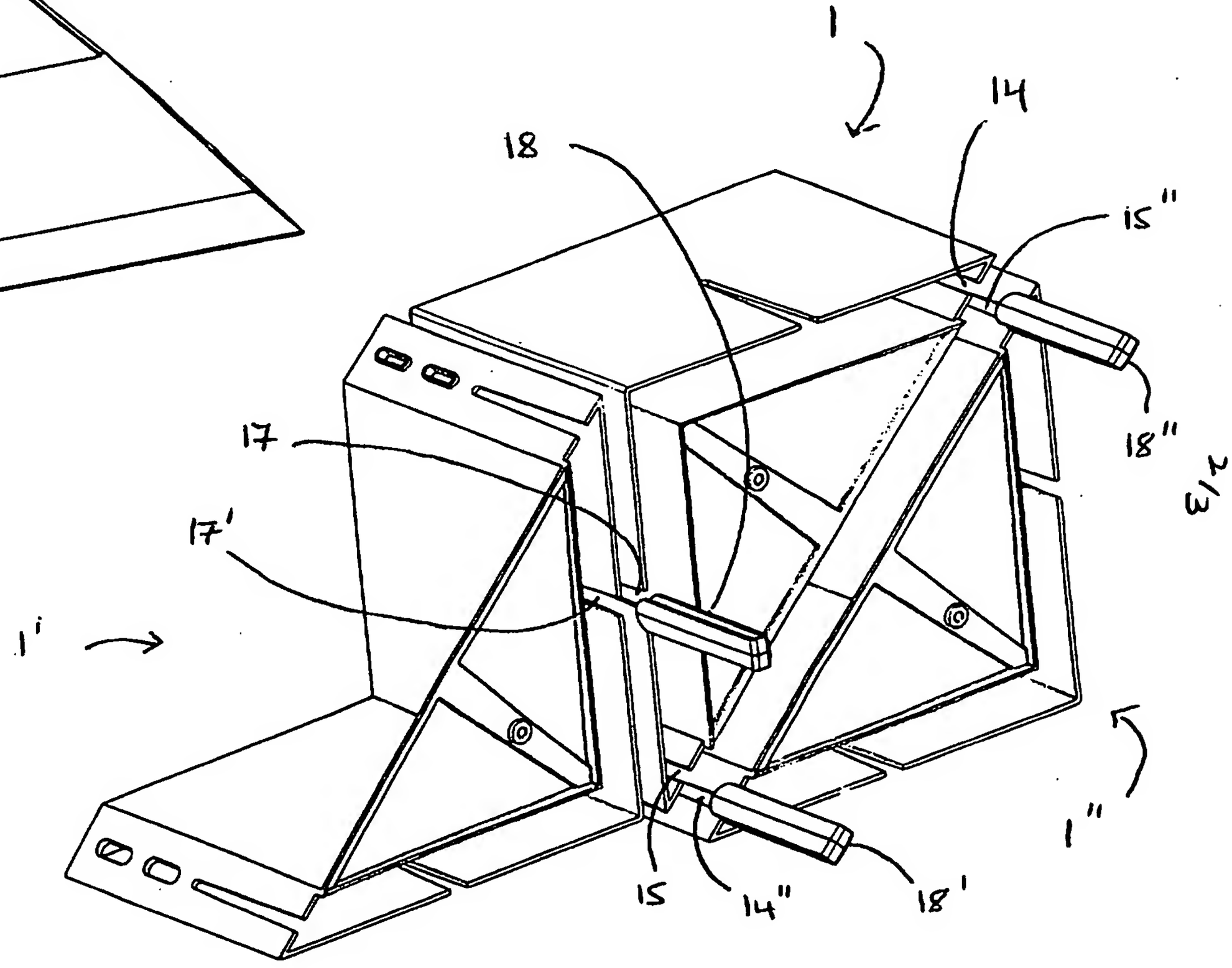
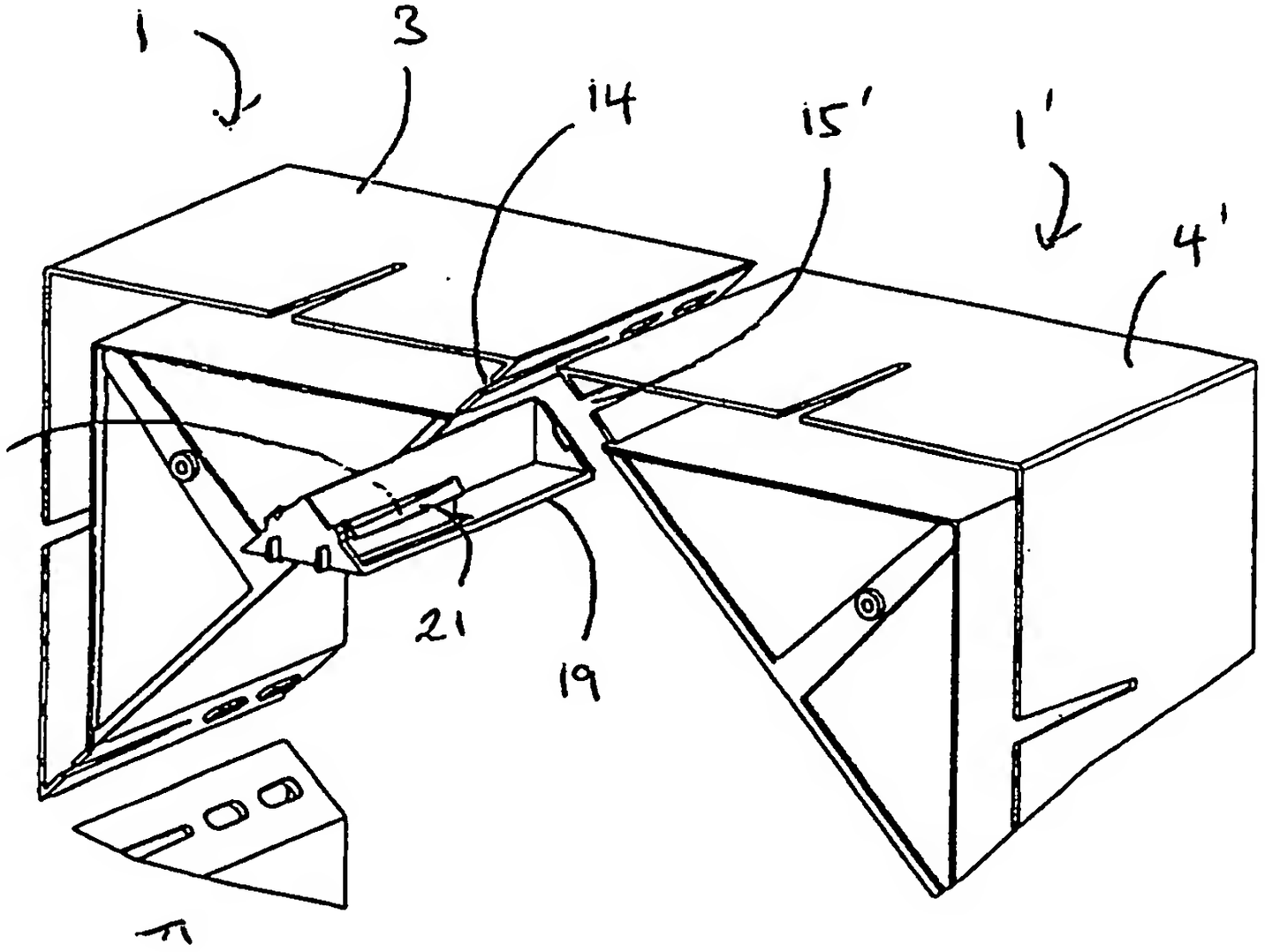


FIG 3



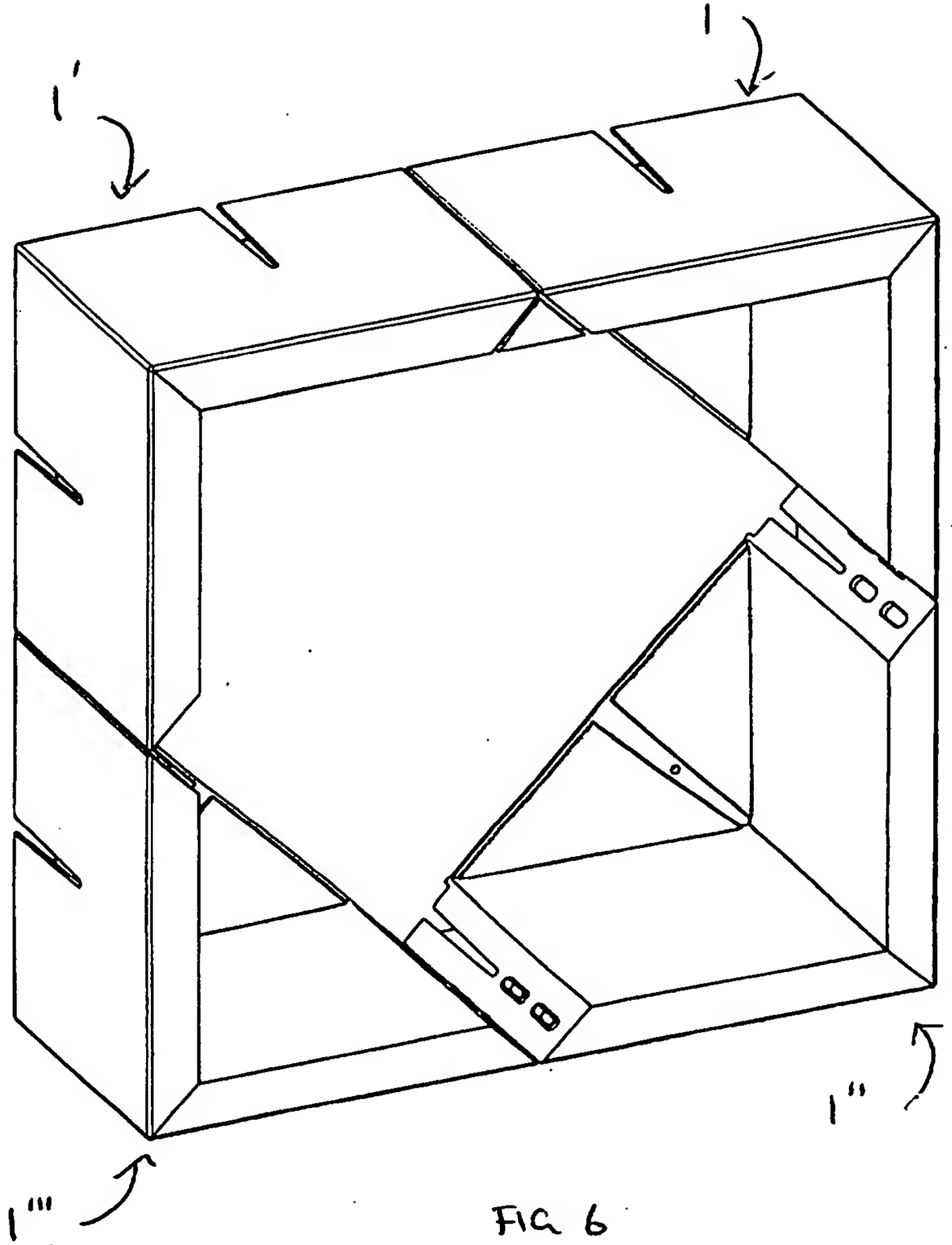


FIG 6

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DESCRIPTION

STORAGE UNIT

The present invention relates to a storage unit, in particular, a storage unit which may be connected to other similarly constructed storage units to provide a multiplicity of storage spaces with flexibility of configuration.

Storage units come in many forms and a wide variety of different types of storage units, such as shelving units, box units and drawer units, are known.

It is an object of the present invention to provide an improved form of storage unit. In particular, it is an object of the present invention to provide a storage unit which makes the best possible, or near to the best possible, use of the storage space available and yet still provides a multiplicity of storage compartments. It is a further object of the invention to provide a storage unit which can be added to from time to time in an aesthetically pleasing manner when the user desires. Yet another object of the invention is to provide a storage unit which can be assembled with other similar storage units in a number of different orientations to provide a flexible and adaptable storage system. Other objects and benefits of the invention will become apparent in the following description.

According to the present invention there is provided a storage unit comprising an

external wall section having at least two walls, at least one wall of the external wall section comprising at least one connecting means thereon for connecting the at least one wall of the external wall section to an external wall section of another similarly constructed storage unit.

The storage unit of the invention allows a user to allocate a storage space in, for example, a house, garage, office or warehouse, and install one or more storage units according to the invention in the storage space. If more than one unit is required then the units can be connected together to provide a multiplicity of storage compartments whilst maximising the utilisation of the storage space available. Being connected together, it is ensured that there are no gaps between plural storage units. If the user requires more storage space in the future then more storage units according to the invention can be added to the existing installation, providing more storage compartments and still fully utilising the space available.

Equally, if a user requires less storage space then units according to the invention can simply be removed from the installation. The storage units of the invention therefore provide the user with great flexibility.

The storage units of the invention may be provided in a variety of shapes and sizes. In one preferred embodiment of the invention, a single storage unit has an external wall section having two walls which are perpendicular to each other. When two such

storage units are connected together in a first orientation, with the free ends of the respective wall pairs joining each other, a combined storage unit having four walls defining a square cross section is produced. When two such storage units are connected together in a second orientation, with one wall of one unit being connected back to back with one wall of the other unit, a combined storage unit having three walls defining a T-shaped cross section is provided. When two such storage units are connected together in a third orientation, with one wall of one unit being connected back to back with one wall of the other unit, a combined storage unit having three walls defining a step cross section is provided. When two such storage units are connected together in a fourth orientation, with the free end of one wall of one unit being connected to the free end of one wall of the other unit, a combined storage unit having three walls defining a U-shaped cross section is provided.

Accordingly, a single storage unit according to the invention can be seen as a building block which can be connected to other similar building blocks to produce a wide variety of different configurations and sizes of storage unit.

Although a preferred embodiment of the invention has two perpendicular walls, many other numbers and orientations of walls may be envisaged. For example, three walls with interconnecting angles of 120° may be provided so that two such storage units connected together at both their free ends form a combined storage unit of hexagonal cross section.

In one preferred storage unit according to the invention, the external wall section comprises at least one flange extending from a free end of one of the at least two walls in a direction generally subtending an area defined by at least two walls, the at least one flange having one of the at least one connecting means thereon.

The flange provided on this embodiment of the invention facilitates interconnection of storage units according to the invention by means of the free (flanged) ends of the walls thereof.

Thus, one preferred storage unit according to the invention may comprise two perpendicular walls, each wall have at its free end a flange extending in a direction subtending a right angled triangle bounded on two sides by the two perpendicular walls. Connecting means may be provided in one or both of the two walls and in one or both of the two flanges. Each allow further storage units according to the invention to be connected to the storage unit in different types of orientation, as will be particularly illustrated below.

In one preferred embodiment of the invention, the at least one connecting means comprises a slot in the external wall section, which slot may be aligned with a corresponding slot on the external wall section of the similarly constructed storage unit and held in such alignment with a clip.

Preferably, the slot is tapered away from an edge of the wall or flange.

Specific examples of such slots and clips will be described later with reference to the drawings

In another preferred embodiment of the invention, the storage unit further comprises an internal wall section comprising at least one wall nested in the external wall section.

Preferably, the internal wall section is joined to the external wall section by respective front and/or side edges of the wall sections and wherein at least a section of the respective back edges of the wall sections are unjoined.

Usually, the internal wall section will have the same number of walls as the external wall section. Preferably, the internal wall section is connected to the external wall section at the free ends thereof respectively. Even more preferably, the internal wall section is formed integrally with the external wall section.

The invention will now be more particularly described with reference to the following drawings in which:

Figure 1 is a first perspective view of one embodiment of a storage unit according to

the invention;

Figure 2 shows a second perspective view of the storage unit shown in figure 1;

Figure 3 shows a perspective from the back of the storage unit of figure 1 in part assembly with two similar storage units on either side;

Figure 4 shows a perspective view from the front of the assembled unit of figure 3;

Figure 5 shows a perspective view from the back of the storage unit at figure 1 in part assembly in a different orientation with two further storage units. Only part of the second and third storage units are shown in Figure 5;

Figure 6 shows a perspective view from the front of four storage units assembled following the part assembly shown in figure 5.

With reference to Figures 1 and 2 , there is shown a storage unit 1 comprising an external wall section 2 having two walls 3 and 4. Walls 3 and 4 are perpendicular to each other and at their free ends are joined to respective flanges 5 and 6 which extend in a direction generally subtending the area defined by walls 3 and 4.

An internal wall section 7 is nested in external wall section 2 and is connected thereto by connecting flanges 8 and 9 and by flanges 5 and 6, all of which constitute beveled edges. Internal wall section 7 has a pair of perpendicular walls 10 and 11 which are generally nested within the corresponding perpendicular walls 3 and 4 of the external wall member 1.

Internal wall section 7 also has a back wall 12 for attachment of the storage unit to a desired surface, such as a wall in a house, office, garage or warehouse. Screw threaded hole 13 is provided for attachment of the storage unit 1 to such a wall.

Flanges 5 and 6 and walls 3 and 4 are provided with respective slots 14, 15, 16 and 17 for connection of the storage unit to other similar storage units.

Referring now to Figure 3 storage unit 1 is shown in part assembly with further similar storage units 1′ and 1″. The connection between storage 1 and storage unit 1′ is achieved by aligning the slot 17 with the slot 17′ and then inserting clip 18 which comprises an elongate U-shaped body having a tapered in-filled region corresponding generally to the geometry of tapered slots 17 and 17'.

The connection between storage unit 1 and storage unit 1″ is effected by aligning slot 15 with slot 14″ and slot 14 with slot 15″ and inserting clips 18′ and 18″ of similar construction to clip 18.

The assembled arrangement is shown from the front in Figure 4 from which it can be seen that the storage units of the invention combine to create an aesthetically pleasing storage space, the means of connection between storage units being hidden from view in the assembled version.

Referring now to Figure 5, there is shown in part assembly an alternative orientation of connection between storage units. Storage unit 1 is connected to storage units 1′and 1″(partially shown in figure 5) by aligning the edges of external walls 3 and 4, so that slots 14 and 15 are oppositely orientated in the manner shown and inserting a clip 19 having an elongate triangular body with an elongate projection 20 for corporating with slot 14 and an opposing elongate projection 21 for corporating with slot 15'.

A similar clip 19′ (not shown) is used to link storage unit 1 to storage unit 1″.

Storage units 1′ and 1″ may then be linked to a further storage unit 1‴ and the combined configuration is shown from the front in perspective view in Figure 6.

CLAIMS

1. A storage unit comprising an external wall section having at least two walls, at least one wall of the external wall section incorporating at least one connecting means thereon for connecting the at least one wall of the external wall section to an external wall section of another similarly constructed storage unit.

2. A storage unit according to claim 1, wherein the external wall section comprises at least one flange extending from a free end of one of the at least two walls in a direction generally subtending an area defined by the at least two walls, the at least one flange having one of the at least one connecting means thereon.

3. A storage unit according to claim 1 or claim 2, wherein the at least one connecting means comprises a slot in the external wall section, which slot may be aligned with a corresponding slot on the external wall section of the similarly constructed storage unit and held in such alignment with a clip.

4. A storage unit according to any one of claims 1 to 3, further comprising an internal wall section comprising at least one wall nested in the external wall section.

5. A storage unit according to claim 4, wherein the internal wall section is joined to the external wall section by respective front and/or side edges of the wall sections

and wherein at least a section of the respective back edges of the wall sections are unjoined.

6. A kit of parts comprising a plurality of storage units according to any one of claims 1 to 5 and one or more connectors for cooperating with the connecting means.

7. A storage unit as hereinbefore described and with reference to the drawings.

Amendments to the claims have been filed as follows

1. A storage unit comprising an external wall section having at least two walls, at least one wall of the external wall section incorporating at least one connecting means thereon for connecting the at least one wall of the external wall section to an external wall section of another similarly constructed storage unit; and an internal wall section comprising at least one wall nested in the external wall section.

2. A storage unit according to claim 1, wherein the external wall section comprises at least one flange extending from a free end of one of the at least two walls in a direction generally subtending an area defined by the at least two walls, the at least one flange having one of the at least one connecting means thereon.

3. A storage unit according to claim 1 or claim 2, wherein the at least one connecting means comprises a slot in the external wall section, which slot may be aligned with a corresponding slot on the external wall section of the similarly constructed storage unit and held in such alignment with a clip.

4. A storage unit according to any one of claims 1 to 3, wherein the internal wall section is joined to the external wall section by respective front and/or side edges of the wall sections and wherein at least a section of the respective back edges of the wall sections are unjoined.

5. A kit of parts comprising a plurality of storage units according to any one of claims 1 to 4 and one or more connectors for cooperating with the connecting means.

6. A storage unit as hereinbefore described and with reference to the drawings.

INVESTOR IN PEOPLE

Application No: GB 0025531.5 **Examiner:** R E Hardy
Claims searched: ALL **Date of search:** 29 January 2001

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.S): A4B

Int Cl (Ed.7): A47B (45/00 47/00 87/00 87/02)

Other: Online : EPODOC,WPI,JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage			Relevant to claims
X	GB2259443	A	LIN PAC : See the Figures, note joinable triangular half-boxes	1,3
X	GB2161365	A	GEFITEC : See the Figures, ribs 1,2,19-22	1,2
X	GB1273394	A	BROWN : See the Figures, slots12 and connector strips 2	1,3
X	GB1145532	A	POWER : See the Figures, members 10	1,2
X	GB1062480	A	ETHICON : See the Figures, flanges 21,22 and clips 34	1-3
X	GB0933918	A	W.C.B. : See the Figures, flanges 13 with channels 12 and connectors 14	1-3
X	GB0884776	A	POHJANIEMEI : See the Figures, grooves 6 and connectors 7,8	1,3
X	GB0492116	A	HENDERSON : See the Figures, lugs 4	1,2
X	DE19528546	A	ITAL : See the Figures, references 5,8	1,3
X	DE3109331	A	IDV : See the Figures, references 17-20	1,2

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.
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A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

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Application No: GB 0025531.5
Claims searched: ALL

Examiner: R E Hardy
Date of search: 29 January 2001

Category	Identity of document and relevant passage	Relevant to claims
X	FR2422363 A CHAZAL : See the Figures, connectable flanges 3,4	1-3

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
		E	Patent document published on or after, but with priority date earlier than, the filing date of this application.
&	Member of the same patent family		